Using Evidence-Based Practices to Promote Social Emotional Well-being and Prosocial Behaviors of Individuals with Autism
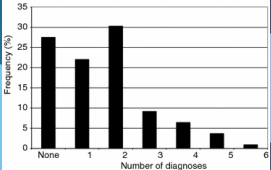
Cognitive-Behavioral Approaches
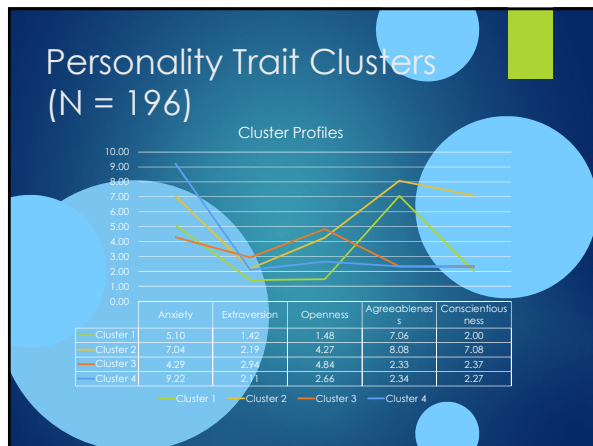
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General Overview

▶ ASD is highly heterogeneous—in terms of personality profiles and comorbidities

▶ Cognitive-behavioral (CBT) approaches have been developed to address this clinical heterogeneity with multiple evidence based practices (EBPs)
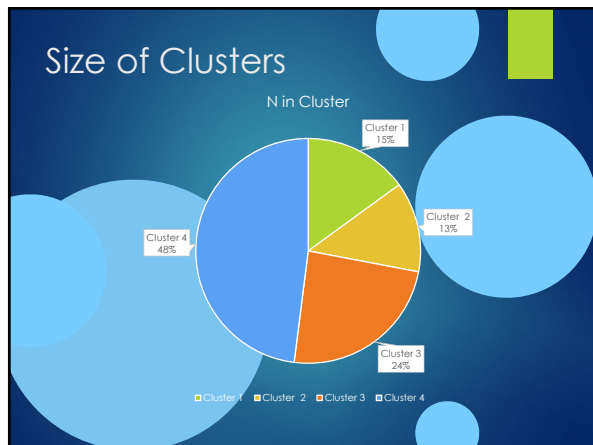

Psychiatric Comorbidity in ASD

Fig. 1 Frequency of the number of comorbid lifetime psychiatric diagnoses per child with autism. Only DSM-IV diagnoses are included (Leyfer et al. 2006)

Personality Trait Clusters (N = 196)

Cluster Profiles

	Anxiety	Extraversion	Openness	Agreeableness	Conscientiousness
Cluster 1	5.10	1.42	1.48	7.06	2.00
Cluster 2	7.04	2.19	4.27	8.08	7.08
Cluster 3	4.29	2.94	4.84	2.33	2.37
Cluster 4	9.22	2.11	2.66	2.34	2.27

Cluster 1 — Cluster 2 — Cluster 3 — Cluster 4

Size of Clusters

N in Cluster

- Cluster 1 — 15%
- Cluster 2 — 13%
- Cluster 3 — 24%
- Cluster 4 — 48%

Cluster 1 Cluster 2 Cluster 3 Cluster 4

Targets of CBT Intervention Distilled from Multiple EBPs for Autism

1. Disruptive and Dysregulated Behavior
2. Anxiety and Depression
3. Rigid and Repetitive Behavior
4. Peer Engagement
5. Conversation and Friendship
6. Self-Care Skills

Differentiating CBT from ABA / BT

- ABA is a common treatment type—multiple hours, at home and/or school. Can last years. No large RCTs for school-aged youth.
- Stems from Radical Behaviorism and relies on associative learning mechanisms to promote change: modeling, practice, reward, generalization.

Differentiating CBT from ABA / BT

- CBT, in present formulation, is offered once weekly in office setting. Typically time limited.
- Aims for synergistic conceptual and behavioral changes through multiple complementary methods (e.g., reframing, reinforcement).

CBT Findings in ASD to Date

- Time-limited group and individual/family based CBT programs have probable efficacy for addressing clinical anxiety in multiple RCTs for school-aged youth (e.g., Reaven et al., 2012; Storch et al., 2013; Wood et al. 2009, 2015)

CBT Findings in ASD to Date

▶ There is also evidence of possible efficacy for addressing social responsiveness/core ASD symptoms with group or individual CBT (e.g., Storch et al., 2014; White et al., 2015; Wood et al., 2014, 2015).

Underpinnings of CBT: Schema Concept

▶ Semantic memories that summarize previous experience and aide in interpreting new experience (e.g., "Making friends is too difficult and not worth the effort")

Underpinnings of CBT: Schema Concept

▶ Memory about the self and the world is organized as a set of related memory records containing associative, procedural, episodic and semantic memories pertaining to personal events, emotions, relationships, etc., at different ages (cf. Barry et al., 2006)

Retrieving "Adaptive" Schemata

▶ Link target cues/situations with <u>positive / adaptive representations</u> and corresponding responses:

Talking to a peer

1. Nonreward, memories of "boring" conversations, "this is not worth my time" → avoid

2. Reward, memories of social chat that elicited *interest*, "helps me make friends, not be lonely" → approach and activate "friendship skills" schema

Adaptability Conferred By Semantic Concepts

1. <u>Concept</u>: "Monsters don't really exist."
   ▶ Situation 1: Bedtime: "They're not under my bed."
   ▶ Situation 2: School: "They're not in the closet."

2. <u>No concept</u>, just habituation / extinction:
   ▶ Situation 1: Bedtime: gets in bed willingly.
   ▶ Situation 2: School closet: "...There <u>are</u> monsters here!" Phobic response.

Enhancing Schema Recall

▶ When the same "cue" is linked with 2 or more memory representations, 3 elements affect which is activated (Brewin, 2006).
   ▶ Elaborated rehearsal with deep semantic processing (Anderson et al., 1994)
   ▶ Maximize the similarity of the cues at the formation of the original memory and the cues at the formation of the new memory (Tulving, 1979)
   ▶ Encode distinct features for the new competitor memory (Anderson et al., 2000)

Clinical Technique of BIACA for Anxiety, Rigidity, Emotional Dysregulation

► Exposure therapy using a hierarchy is the foundational behavior change tool for this clinical area.
► Supplemental cognitive therapy elements promote generalization and motivation to engage in exposures.

Sample Hierarchy – Separation Anxiety

Sample Activity	Difficulty Rating (0-10)
Going to the top of stairs alone and staying for 10 sec (no one else upstairs)	0?
Going to the top of stairs alone and going into a completely dark room for 1 or 2 min. (no one else upstairs)	10?

Other Sample Hierarchy Items

Making Mistakes on Purpose	Making a small mistake (e.g., on homework, on piano) in front of brothers, *acting like it wasn't a mistake* (e.g., showing the wrong answer), and keeping cool the whole time.
Losing games with a calm attitude	Play a very quick game like tic tac toe and *lose on purpose*, keeping cool the whole time.
Trying difficult school work by myself, calmly	Try for at least 1 minute on a "more difficult" type of problem from school that I normally avoid—have a calm attitude the whole time, be ok with being wrong, and don't ask for help.

Other Evidence-Based Practice Elements in CBT

- Cognitive skills: perspective taking and reframing
- Behavioral skills for children (self-regulation): self-management / habit reversal and positive reinforcement
- Behavioral skills for parents (self-regulation): antecedent management and extinction
- Cognitive-behavioral skills for children (peer relationships): friendship skills training

Parent's Role in CBT for Students with ASD

- Administer reward system consistently
- Encourage / remind about daily tasks (exposures and social practicing)
- Overseeing playdates, promoting good hosting
- Social coaching as philosophy all day long
- Modeling adaptive thoughts and social behavior
- Interfacing with school on home-school note
- Promoting independence in daily self-help skills and providing related positive feedback

Comparison of CBT vs. Enhanced Social Skill Groups

- Supported by grants from NIMH (R01-MH094391) and Autism Speaks
- 106 children with ASD
- Diagnoses confirmed-ADOS,ADIR
- IQ > 70
- Ages 6-13 years (M = 9.58 years)

Primary Outcome Measure

▶ **Playground Observation of Peer Engagement (POPE)** scale (Kasari et al., 2012). The primary outcome variable is the number (ranging from 0 to 15) of 1-minutes intervals during each observation that the child spent initiating social behaviors, responding to social initiations, engaging in reciprocal communication with peers, or participating in cooperative play during free play at school.
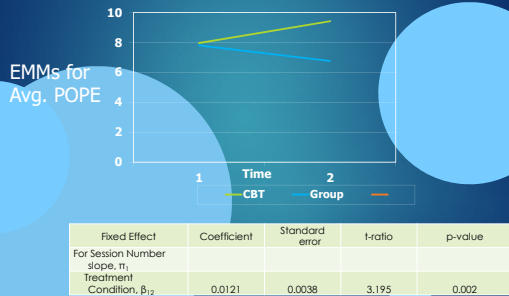
Secondary Outcome Measure

▶ **Youth Top Problems (YTP)** scale (Weisz et al., 2011). The YTP scale is a valid and reliable personalized symptom assessment that is sensitive to psychotherapy treatment response.

▶ The YTP was initially administered after the ADI-R at Screening. Parents stated what symptoms/problems were the most concerning to them.
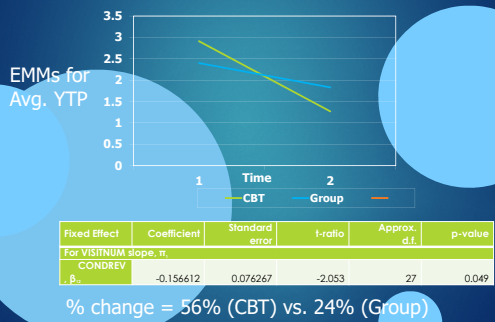
Technology-Mediated Home Observations-YTP

▶ Building off the YTP method, parents videostreamed 2 hours per day of their child's behavior at home in the afternoon via iPhone using Ustream.

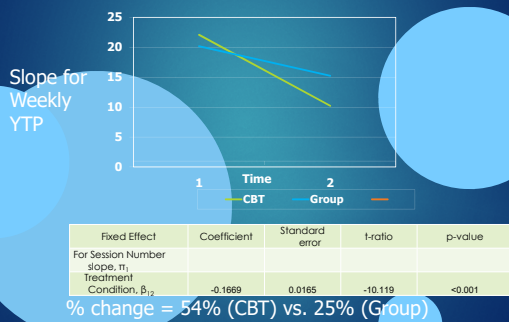▶ Videostreaming occurred 5 days before treatment and 5 days after treatment.

Primary Outcome Measure: POPE Observed Engagement

EMMs for Avg. POPE

Fixed Effect	Coefficient	Standard error	t-ratio	p-value
For Session Number slope, π_1				
Treatment Condition, β_{12}	0.0121	0.0038	3.195	0.002

YTP Observational Ratings

EMMs for Avg. YTP

Fixed Effect	Coefficient	Standard error	t-ratio	Approx. d.f.	p-value
For VISITNUM slope, π_1					
CONDREV, β_{1z}	-0.156612	0.076267	-2.053	27	0.049

% change = 56% (CBT) vs. 24% (Group)

YTP Weekly Parent Ratings

Slope for Weekly YTP

Fixed Effect	Coefficient	Standard error	t-ratio	p-value
For Session Number slope, π_1				
Treatment Condition, β_{12}	-0.1669	0.0165	-10.119	<0.001

% change = 54% (CBT) vs. 25% (Group)

Summary and Resources

▶ CBT was efficacious in comparison to an enhanced social skills group.
▶ CAPTAIN Resources:
http://www.captain.ca.gov/resources.html
▶ AFIRM CBT Modules:
https://afirm.fpg.unc.edu/cognitive-behavioral-intervention

Next Steps

▶ UCLA-MEYA program: it's coming! (MEYA: Modular EBPs for Youth with ASD)
▶ A free internet based training platform for clinicians intended to disseminate CBT for school-aged youth with ASD.
▶ Completed study funded by NIMH. Hopefully more to come. Info to be disseminated in collaboration with CAPTAIN.